

Remarks

The above Amendments and these Remarks are in reply to the Office Action mailed October 23, 2002. The fee for addition of new claims (or conversion of claims from dependent form to independent form) is included herewith.

Claims 1-60 were pending in the Application prior to the outstanding Office Action. In the Office Action, the Examiner rejected claims 1-9, 12, 20, 21, 24-28, 30, 31, 34-39, 47, 48 and 52-56, and objected to claims 10, 11, 13-19, 22, 23, 29, 32, 33, 40-46, 49-51 and 57-60 solely as being dependent upon a rejected base claim. The present Response amends claims 1, 10, 22, 23, 29, 32, 33, 40, 41, 43, 45, 49 and 57-59 and adds new claims 61-90, leaving for the Examiner's present consideration claims 1-9, 12, 20, 21, 24-28, 30, 31, 34-39, 47, 48, 52-56 and 61-90. Reconsideration of the rejections is requested.

I. Rejection of Claims 27 and 37 Under 35 U.S.C. §112

The Examiner rejected claims 27 and 37 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Applicant respectfully traverses this rejection.

The Examiner points out that "said track and sector", as disclosed in claim 27 prior to amendment, lacks prior antecedent basis. The Applicant has amended claim 27 to address this. Claim 27 as amended is dependent from claim 26, and therefore has antecedent basis. Accordingly, the Applicant respectfully requests the withdrawal of this rejection.

The Examiner points out that "said receptor", as disclosed in claim 37 prior to amendment, lacks prior antecedent basis. The Applicant has amended claim 37 to address this. Claim 37 as amended is dependent from claim 35, and therefore has antecedent basis. Accordingly, the Applicant respectfully requests the withdrawal of this rejection.

II. Rejection of Claims 1-9, 12, 24, 25, 30, 31, 34-36, 38, 39, 47, 48 and 52-55 Under 35 U.S.C.

§102(b)

The Examiner rejected claims 1-9, 12, 24, 25, 30, 31, 34-36, 38, 39, 47, 48 and 52-55 under 35 U.S.C. §102(b) over U.S. Patent No. 5,471,064 to Koyanagi et al. ("Koyanagi"). The Applicant respectfully traverses this rejection.

A. Claims 1-9, 12, 24, 25, 30, 31, 34-36, 38 and 39

The Examiner describes *Koyanagi* as disclosing "(b)...a moveable reading/writing mechanism 5 comprising a moveable platform (Fig. 4)" The Applicant submits that *Koyanagi* does not disclose all of the features of claims 1-9, 12, 24, 25, 30, 31, 34-36, 38 and 39 because *Koyanagi* fails to disclose either "a moveable platform comprising silicon dioxide" or "each of the at least one fine tip portion can be independently actuated toward said media surface" as recited in claim 1.

Referring to Figure 4, *Koyanagi* describes "using a tunneling acoustic microscope (TAM)" with a probe consisting of a tip 25. *Koyanagi* fails to describe a moveable platform comprising silicon dioxide. Further, *Koyanagi* describes "the tip 25 is vibrated in the z direction by an xyz-driving device 5 in response to a sinusoidal voltage applied by oscillator 400"; however, claim 1 includes "each of the at least one fine tip portion can be independently actuated toward said media surface." This cannot be accomplished if the platform vibrates the tip 25.

Since *Koyanagi* fails to disclose all of the features of claim 1, *Koyanagi* cannot anticipate claim 1 under 35 U.S.C. §102(b). Dependent claims have at least the features of the independent claim from which they ultimately depend; therefore, *Koyanagi* cannot anticipate dependent claims 2-9, 12, 24, 25, 30, 31, 34-36, 38 and 39 under 35 U.S.C. §102(b). Accordingly, the Applicants respectfully request the withdrawal of this rejection.

B. Claims 47 and 48

The Examiner describes claims 47 and 48 as being “drawn to the method of using the corresponding apparatus claimed in claims 1 and 34-36. Therefore method claims 47 and 48 correspond to apparatus claims 1 and 34-36 and are rejected for the same reasons of anticipation (obviousness) as used above.”

For the reasons given above, the Applicants argue that claims 1 and 34-36 are not anticipated. Notwithstanding the patentability of claims 1 and 34-36, in order for claim 47 to be anticipated every element of the claim must be anticipated. Nowhere does *Koyanagi* disclose the steps of “emanating an electromagnetic radiation signal from said fine tip toward a media surface”, “receiving a return electromagnetic radiation signal by a receptor offset from said fine tip”, “determining a pattern in said return electromagnetic radiation signal caused by an object between said receptor and an origin of said return electromagnetic radiation signal” and “calculating a position of said object based on said pattern.” *Koyanagi* discloses that “vibration of the tip is transmitted to the sample 4 and to the piezoelectric transducer 401...A servo system 9 comprises a differential amplifier 404 and a reference voltage source Vref. The output signal from differential amplifier 404 controls the xyz drive device 5 to keep the acoustic signal equal to Vref.” See *Koyanagi* column 6, lines 42-51. The tip disclosed in *Koyanagi* vibrates, but does not “[emanate] an electromagnetic radiation signal” as recited in Applicants’ claim 47.

Since *Koyanagi* fails to disclose any of the steps of claim 47, *Koyanagi* cannot anticipate claim 47 under 35 U.S.C. §102(b). Dependent claims have at least the features of the independent claim from which they depend; therefore, *Koyanagi* cannot anticipate dependent claim 48 under 35 U.S.C. §102(b). Accordingly, the Applicants respectfully request the withdrawal of this rejection.

C. Claims 52-55

The Examiner describes *Koyanagi* as disclosing “texturing the surface of the media 4.” The Applicants respectfully submit that *Koyanagi* does not disclose all of the features of claims 52-55 because *Koyanagi* fails to disclose “texturing the surface of said media” as defined in the invention.

Texturing the surface of a media requires that “[t]he charge storage capabilities are then enhanced by augmentation of grain boundaries of the media material. This augmentation is performed by applying material coating...to the surface of the media material, and then removing the coating. Pit markings remain that augment the grain boundaries of the media material, and enhance the charge storage capabilities of the media.” See Specification page 97, lines 20-24.

The Examiner relies on Figs. 5a-c to show texturing steps. In referring to Figures 5a to 5c, *Koyanagi* describes forming protruding structures and recessed structures at the surface of the sample (by machining the surface). *Koyanagi* does not disclose that surface “augmentation is performed by applying material coating...and then removing the coating” to augment the grain boundaries. Figs. 5a-c therefore do not disclose “texturing the surface of said media” as recited in claim 52.

Since *Koyanagi* fails to disclose any of the steps of claim 52, *Koyanagi* cannot anticipate claim 47 under 35 U.S.C. §102(b). Dependent claims have at least the features of the independent claim from which they ultimately depend; therefore, *Koyanagi* cannot anticipate dependent claim 53-55 under 35 U.S.C. §102(b). Accordingly, the Applicants respectfully request the withdrawal of this rejection.

III. Rejection of Claims 20, 21, 26-28 and 37 Under 35 U.S.C. §103(a)

The Examiner rejected claims 20 and 21 under 35 U.S.C. §103(a) over *Koyanagi* in view of U.S. Patent No. 6,196,061 to Adderton et al. (“Adderton”), claims 26 and 27 under 35 U.S.C. §103(a) over *Koyanagi* in view of U.S. Patent No. 5,804,710 to Mamin et al. (“Mamin”), claim 28 under 35 U.S.C.

§103(a) over *Koyanagi* in view of U.S. Patent No. 5,471,064 to Miyazaki et al. (“Miyazaki”), and claim 37 under 35 U.S.C. §103(a) over *Koyanagi* in view of U.S. Patent No. 5,808,973 to Tanaka (“Tanaka”). The Applicant respectfully traverses these rejections.

To render a claim obvious under §103(a), a reference or a combination of references must teach or suggest all of the features of Applicant’s claim. In view of the remarks in Section IIA above, the Applicant submits that *Koyanagi* fails to teach or suggest all of the features of claim 1, from which claims 20, 21, 26-28 and 37 ultimately depend. It is submitted that the additional cited art fails to remedy this deficiency.

A. Claims 20 and 21

Koyanagi fails to disclose that “each of the at least one fine tip portion can be independently actuated toward said media surface” as recited in claim 1. In reference to Figure 3, *Adderton* discloses “a first and second cantilever beams 32 and 34...[and] a cross beam 50 connects the two cantilever beams 32, 34” (Emphasis added). See column 7, lines 30-37. Since *Koyanagi* in view of *Adderton* fails to teach or suggest all of the features of claim 1, *Koyanagi* in view of *Adderton* cannot render claim 20 obvious under 35 U.S.C. §103(a). Dependent claims have at least the features of the independent claim from which they ultimately depend; therefore, *Koyanagi* in view of *Adderton* cannot render claims 20 and 21 obvious under 35 U.S.C. §103(a). Accordingly, the Applicant respectfully requests the withdrawal of this rejection.

B. Claims 26 and 27

In view of the remarks in Section IIA above, Applicant submits that *Koyanagi* fails to teach or suggest all of the features of claim 1, from which claims 26 and 27 ultimately depend. *Mamin* fails to remedy this deficiency. Figure 5 of *Mamin* shows an AFM having a cantilever connected to a large support. Nowhere does *Mamin* disclose “a moveable platform comprising silicon dioxide” as recited in claim 1.

Since *Koyanagi* in view of *Mamin* fails to teach or suggest all of the features of claims 26 and 27, *Koyanagi* in view of *Mamin* cannot render claims 26 and 27 obvious under 35 U.S.C. §103(a). Accordingly, the Applicant respectfully requests the withdrawal of this rejection.

C. Claim 28

In view of the remarks in Section IIA above, Applicant submits that *Koyanagi* fails to teach or suggest all of the features of claim 1, from which claims 26 and 27 ultimately depend. *Miyazaki* fails to remedy this deficiency.

Referring to Figure 16, *Miyazaki* discloses “[c]antilever units 131, 132, and 133 are formed on a silicon substrate 140.” See column 19, lines 40-42. Nowhere does *Miyazaki* disclose “a moveable platform comprising silicon dioxide” as recited in claim 1.

Since *Koyanagi* in view of *Miyazaki* fails to teach or suggest all of the features of claim 28, *Koyanagi* in view of *Miyazaki* cannot render claim 28 obvious under 35 U.S.C. §103(a). Accordingly, the Applicant respectfully requests the withdrawal of this rejection.

D. Claim 37

In view of the remarks in Section IIA above, Applicant submits that *Koyanagi* fails to teach or suggest all of the features of claim 1, from which claims 26 and 27 ultimately depend. *Tanaka* fails to remedy this deficiency.

Referring to Figure 2, *Tanaka* discloses a “a needle-like ceramic head arm 3” on which a magnetic head is connected. See column 5, lines 38-39. Nowhere does *Miyazaki* disclose “a moveable platform comprising silicon dioxide” as recited in claim 1.

Since *Koyanagi* in view of *Tanaka* fails to teach or suggest all of the features of claim 37, *Koyanagi* in view of *Tanaka* cannot render claim 37 obvious under 35 U.S.C. §103(a). Accordingly, the Applicant respectfully requests the withdrawal of this rejection.

IV. Rejection of Claim 56 Under 35 U.S.C. §103(a)

The Examiner rejected claim 56 under 35 U.S.C. §103(a) over *Koyanagi* in view of U.S. Patent No. 6,001,519 to Yang et al. ("Yang"). The Applicant respectfully traverses this rejection.

In view of the remarks in Section IIC above, the Applicants submit that *Koyanagi* fails to teach or suggest all of the features of claim 52, from which claim 56 ultimately depends. *Yang* fails to remedy this deficiency. The Examiner describes *Yang* as disclosing "a high molecular weight information recording medium having a PMMA layer 3 (Fig. 2A)...to improve reliability of the recording medium, it would have been obvious...to use a PMMA type recording medium..." However, as discussed above in Section IIC, texturing the surface of a media requires that "[t]he charge storage capabilities are then enhanced by augmentation of grain boundaries of the media material. This augmentation is performed by applying material coating...to the surface of the media material, *and then removing the coating*" (Emphasis added). *Yang* uses a PMMA layer as part of the recording medium, and does not disclose removing the PMMA layer.

Since *Koyanagi* in view of *Yang* fails to teach or suggest all of the features of claim 52, *Koyanagi* in view of *Tanaka* cannot render claim 56 obvious under 35 U.S.C. §103(a). Accordingly, the Applicant respectfully requests the withdrawal of this rejection.

V. Objection to Claims 10, 11, 13-19, 22, 23, 29, 32, 33, 40-46, 49-51 and 57-60

In the Office Action, claims 10, 11, 13-19, 22, 23, 29, 32, 33, 40-46, 49-51 and 57-60 were allowed on condition that the claims be rewritten to "include all of the limitations of the base claim...and any intervening claims." With exceptions including changes to the last portion of original claim 1, the Applicant has amended claims 10, 22, 23, 29, 32, 33, 40, 41, 43, 45, 49 and 57-59 to include the limitations of the base claim and any intervening claims. Accordingly, the Applicant requests that claims 10, 22, 23, 29, 32, 33, 40, 41, 43, 45, 49 and 57-59 be allowed.

The Applicant respectfully submits that claims 11 and 13-19 depend from claim 10, claim 42 depends from claim 41, claim 44 depends from claim 43, claim 46 depends from claim 45, claim 50 and 51 depend from claim 49, and claim 60 depends from claim 59, therefore claims 11, 13-19, 42, 44, 46, 50, 51 and 60 need not be rewritten to include the limitations of the newly independent claims, which as rewritten are allowable. Accordingly, the Applicant requests that claims 11, 13-19, 42, 44, 46, 50, 51 and 60 be allowed.

VI. Addition of Claims 61-90

The newly added claims are, it is submitted, allowable over the cited art.

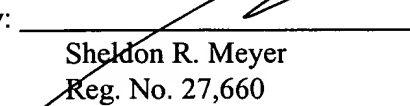
VII. Conclusion

In view of the above Remarks, reconsideration of claims 1-9, 12, 20, 21, 24-28, 30, 31, 34-39, 47, 48 and 52-56 is requested, as well as consideration of new claims 61-93. It is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and a Notice of Allowance is requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

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